ST. LAWRENCE VISION 2000

BIENNIAL REPORT

1998-2000

Canada

St. Lawrence Vision 2000

Québec

BIENNIAL REPORT 1998-2000

St. Lawrence
Vision 2000

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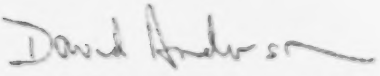
MESSAGE FROM THE FEDERAL MINISTER OF THE ENVIRONMENT

A healthy environment is an integral part of our sustainable development. A healthy environment is also essential for maintaining our quality of life, because it affects all facets of our collective well-being: our health, our work, our recreational activities and our children. I believe that an initiative like the St. Lawrence Vision 2000 Action Plan, now in its thirteenth year, clearly shows how beneficial it can be to work together to ensure that a major ecosystem such as the St. Lawrence remains a prosperous, ecologically diverse and sustainable environment as well as a good place to live.

I am proud of the leadership which the Canadian and Quebec governments have exercised during the three successive phases of the action plan. From the outset, we have developed the invaluable co-operation and support for activities with all the other partner departments in the federal and provincial governments. Through these sustained concerted efforts, substantial results have been achieved since 1988, and a groundswell of support has arisen for initiatives to protect the St. Lawrence. This is an encouraging state of affairs for future generations, which will similarly be able to promote their development and prosper thanks to the resources of the St. Lawrence.

Sustainable development of major ecosystems is a complex task, and one that governments cannot accomplish on their own. The commitment of citizens to their natural environment is equally important. The St. Lawrence Vision 2000 Action Plan has shown us that it is by working with people who are aware of what is happening locally that the best results can be attained. I therefore wish to extend my thanks to you, the citizens of the St. Lawrence, and I encourage you to keep up the good work, because collectively we will be able to restore and preserve this rich natural heritage.



David Anderson, *P.C., M.P.*
Minister of the Environment

103-03882/

MESSAGE FROM THE MINISTER OF THE MINISTÈRE DE L'ENVIRONNEMENT DU QUÉBEC

As Québec Minister of the Ministère de l'Environnement and Government of Québec signatory of the co-operation agreement on the St. Lawrence River known as St. Lawrence Vision 2000 (SLV 2000), I am pleased to play a part in disseminating the results of the first two years of this third agreement. The biennial report now being released reviews the achievements that have marked this period and that have enabled us to make great strides.

The sustainable development of the St. Lawrence River is of vital importance to the wellbeing of Québec's economy and ecology. It hinges on continuous improvement of the environmental quality of the St. Lawrence, to which SLV 2000 initiatives contribute a great deal. As you will see on reading this document, action taken to protect biodiversity and to promote ecologically sound agricultural practices and industrial accountability has produced highly encouraging results.

Major environmental challenges such as the implementation of the St. Lawrence action plan can only be met collectively. In this regard, I wish to underline the contributions of all those who have joined forces in the last two years to improve the St. Lawrence River environment, furthering the progress achieved since the inception of SLV 2000 in 1988.

Sustainable water management in Québec is a priority for the Québec government, as it is for Quebecers who are called upon to play an important role in the sustainable development of the St. Lawrence. In this regard, it gives me great pleasure to note the invaluable support given to SLV 2000 by individuals living along the river. Their contributions have been a significant factor in the program's success.

I would like to encourage all partners in SLV 2000 to sustain the efforts they have undertaken along the entire length of this vast artery which is the St. Lawrence, a source of sustenance and pride for Quebecers.

Paul Bégin
Ministre de l'Environnement,
ministre du Revenu et ministre responsable
de la région de la Capitale Nationale

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MESSAGE FROM THE AGREEMENT CO-CHAIRS

We are pleased to present the impressive results of the first two years of work under Phase III of the St. Lawrence Vision 2000 Action Plan. This phase began in June 1998 following the signature, by the Canadian and Québec Departments of the Environment, of a new five-year agreement on joint action. This ambitious plan was established with a focus on consensus and partnerships and with the participation of more than 200 environmental stakeholders in Québec, including many representatives from riverside communities.

During Phase III, the efforts of the past 10 years are being continued and consolidated through measures aimed at industrial pollution abatement, agricultural clean-up, biodiversity protection and conservation and the acquisition and dissemination of knowledge related to the health of riverside communities located along the St. Lawrence River. Two new study components have been added in relation to navigation and the impacts of water level fluctuations; these involve examining key issues pertaining to the sustainable development of the St. Lawrence.

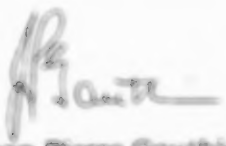
Community involvement has taken on even greater importance in this phase of the Action Plan. Thirteen ZIP (Areas of Prime Concern) committees are now in place to actively implement environmental remedial action plans along the St. Lawrence. In addition, a new joint Canada-Québec funding program has been created, allowing more than 75 community projects to be undertaken over the past two years, with over $3 million in funding from Environment Canada, the Ministère de l'Environnement du Québec and the Société de la faune et des parcs du Québec.

A number of other actions and measures implemented in the different areas of action are worthy of note. For example, concrete measures have been successfully implemented, helping to reduce pesticide use in the agricultural environment and decrease pesticide contamination in the water in some tributaries of the St. Lawrence. With regard to the biodiversity component, 19 action plans are being implemented with the aim of ensuring the maintenance or recovery of endangered species, and the first multidisciplinary studies have been conducted on the effects of water level fluctuations on the river ecosystem. A first series of pollution prevention pilot projects has been initiated in small and medium-sized businesses within the metallurgical, metal processing and chemical sectors. In addition, a program geared to the development of new environmental technologies has given rise to 18 projects representing a total investment of $16.4 million. A number of studies are being carried out to reduce human exposure to the contamination risks posed by recreational waters, drinking water and aquatic products.

The recently founded Navigation committee has provided an important forum for players from all the areas concerned (government departments,

shipping industry and environmental protection and community associations). Various studies have served to clearly define the environmental issues and the true impact of commercial shipping and recreational boating.

All of the above-mentioned results have been attained through a productive partnership based on close co-operation among all participants and focussed on the attainment of shared objectives. The progress achieved so far appears to afford assurance of continued success in our pursuit of the objectives set under Phase III of the St. Lawrence Vision 2000. We wish to thank all partners for their ever stronger commitment to the protection, conservation and development of the St. Lawrence and we encourage all stakeholders to keep up the good work so that this major undertaking, which is of crucial importance for the entire population, will be successful in every way.



Jean-Pierre Gauthier
Co-chair Canada
St. Lawrence Vision 2000

George Arsenault
Co-chair Québec
St. Lawrence Vision 2000

THE ST. LAWRENCE VISION 2000 ACTION PLAN — PHASE III

A first progress report

This biennial report is the first progress report to be written since the signature of the Canada-Québec Agreement for Joint Action on the St. Lawrence, on June 8, 1998. This agreement governs the third phase of the St. Lawrence Vision 2000 Action Plan (SLV 2000) which is scheduled to continue into 2003. The report provides information on the targeted results, the highlights and the main activities that had been carried out as at March 31, 2000 for each of the six areas of action or components. The report also outlines for the same period, the federal and Québec government expenditures for the program.

The report is intended to inform riverside residents, the population at large and all SLV 2000 partners interested in this vast project about the concrete results achieved and the progress made over the past two years in implementing Phase III.

A focus on prevention and community involvement

Phase III of SLV 2000 seeks to achieve three major objectives: protecting ecosystem health, protecting human health and encouraging the participation of riverside communities. It has a budget of $239 million.

During phases I and II of SLV 2000, priority was given to the most urgent interventions, such as reducing discharges of toxic liquid effluents from the industrial sector and protecting wildlife habitats and species of concern. Phase III, for its part, emphasizes prevention, particularly in relation to human health, industrial and urban clean-up, agriculture and navigation. It promotes the use of voluntary measures and the adoption of good environmental practices. There is also a focus on public education and awareness. As well, Phase III places even greater emphasis on community involvement. The governments recognize that riverside communities are in the best position to identify and direct local initiatives addressing various environmental issues or the enhancement of the St. Lawrence. Furthermore riverside communities are, to an increasing extent, acquiring the knowledge, tools and know-how needed to successfully undertake activities that they consider to be priorities in their area.

The areas of action

In Phase III, St. Lawrence Vision 2000 includes six components under which actions are carried out with the ultimate goal of ensuring the sustainable development of the St. Lawrence ecosystem. These areas of action are as follows: Agriculture, Biodiversity, Community Involvement, Industrial and Urban, Navigation and Human Health.

With regard to the Navigation component, every effort will be made, in conjunction with shipping industry stakeholders, to implement a sustainable navigation strategy. Sediment management, dredging and aquatic contaminated sites, shoreline protection against wave action from ships, improvements in the management of risk and environmental hazards and ballast water management are all objectives of this area of concern.

Lastly, we should also mention that a working group has been set up under Phase III with a mandate to develop and implement a scientific program to monitor in a comprehensive and integrated manner the changes in the state of the St. Lawrence ecosystem. Their work is described in the Biodiversity section of this report.

Government partners

To continue to obtain concrete, measurable results of the highest quality, a number of departments, organizations and agencies of the federal and Québec governments have pooled their expertise, information and resources with a view to greater harmonization of their actions and work. On the federal government side, the partner departments of SLV 2000 are as follows: Environment Canada, Agriculture and Agri-Food Canada, Canada Economic Development, Parks Canada, Fisheries and Oceans Canada, Health Canada, Transport Canada and Public Works and Government Services Canada. The Québec government participates through its Ministère de l'Agriculture, des Pêcheries et de l'Alimentation, Ministère de l'Environnement, Ministère de la Santé et des Services sociaux, Ministère des Transports and the Société de la faune et des parcs du Québec.

Non-governmental partners

The governments recognize that this integrated, multidisciplinary and multistakeholder approach must extend beyond their departments, organizations and agencies. Accordingly, for several years, many non-governmental partners have been associated with SLV 2000. Stratégies Saint-Laurent, for example, has been mandated through ZIP (Area of Prime Concern) committees to bring together and encourage riverside communities in Québec to promote local initiatives for the conservation and enhancement of uses and resources of the St. Lawrence. As well, an Advisory Committee set up in 1996 (Phase II of SLV 2000) to give advice on various aspects of SLV 2000, brings together some 30 members from all sectors of activity related to the river. Finally, there are many SLV 2000 partners from the private sector and universities, not to mention all the individuals, schools and member organizations of the Biosphere Ecowatch Network.

A management challenge

From the outset, St. Lawrence Vision 2000 has applied management principles directed primarily at obtaining measurable, concrete results and promoting true concerted action by the partners. The ever-growing number of partners, representing a diversity of interests, the number and complexity of the areas of action, and the limited human and financial resources available make the task of managing this Canada-Québec agreement quite a challenge.

As a result, new management tools have been created, such as a management tracking system for SLV 2000 results, which is accessible to the partners on the Internet, a performance framework and performance indicators and a mid-plan evaluation of the program. The evaluation includes a workshop aimed at assessing the status of the work in June 2000, and will enable all the cooperation committees to report to other

partners on the status of their projects, their successes and difficulties encountered. In some cases it will be the opportunity to make the changes required to ensure that all the targeted results are attained by March 2003.

AGRICULTURE

The Agriculture component of SLV 2000 Phase II heightened awareness among the various stakeholders involved and resulted in the formulation of agricultural cleanup plans for the four targeted watersheds of the Chaudière, L'Assomption, Boyer and Yamaska rivers. In Phase III, activities to reduce pollution from agricultural sources and promote sustainable development will continue under the Agriculture area of action.

During the last eight years, significant efforts have been undertaken in agriculture due to several complementary programs by the Québec government. They comprise an agricultural cleanup program and regulations developed between 1980 and 1990; an agroenvironmental investment assistance program, the Programme d'aide à l'investissement en agroenvironnement (PAIA), which was launched in 1997 and was renamed Prime-Vert in 1999; and a pest-management strategy, the Stratégie phytosanitaire, established in 1992. Today, under Phase III, additional strides are being made towards achieving sustainable agriculture.

TARGET RESULTS FOR
March 31, 2003

Reduce by 50% the use of pesticides and obtain 70% of the area under integrated control measures by 2003 and follow-up to verify the achievement of results.

Set up 5 advisory clubs on the Boyer River in order to ensure an agro-environmental management of the watershed and to reestablish smelt.

Validate an indicator on the risks of surface water contamination by phosphorus.

Carry out control and inspection in the area of agricultural cleaning up and make agricultural industries conform to the *Règlement sur la réduction de la pollution d'origine agricole dans des tributaires du Saint-Laurent*.

Reduction in pesticide use

The objective is to promote the integrated management of agricultural pests (such as weeds, insects and diseases) by reducing the amount of pesticides used on field crops (corn, soybeans, oats, wheat and barley), apples and potatoes. Herbicides, which represent 67% of agricultural pesticide sales, have been targeted more than other pesticides in terms of research, development and technology transfer activities.

A number of projects are being carried out under the Programme agroenvironnemental de soutien de la Stratégie phytosanitaire, an agroenvironmental program supporting the pest management strategy. The objective of this program is to support development and technology transfer projects. Since 1998, roughly $1.24 million has been provided to fund 50 projects, 26 (52%) of which involve field crops, 14 (28%), apples and 10 (20%), potatoes. When the financial participation of all the various stakeholders is taken into account, these investments total over $2.1 million. Many of these projects involve the watersheds of the Chaudière, L'Assomption, Richelieu and Yamaska rivers, areas of intensive agricultural production.

Projects targeting field crops have involved testing reduced pesticide application rates, holding training workshops, experimenting with mechanical weeding and using integrated pest management practices on the farm. In apple growing, activities include the development of a new type of sprayer; the development of techniques using predacious mites, the use of urea and reduced end-of-season treatments to control apple scab; and the updating of knowledge on control methods that could replace chemical pesticides. In potato cultivation, activities have targeted the production of technical bulletins on secondary insects; studies on peak egg hatch in the Colorado potato beetle (to better direct control measures); the reduction of the use of herbicides; the use of nonchemical weed control; the creation of a poster on sprays; the establishment of a forecasting model for late blight of potato; the develop-

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Photo : Laval Perron, Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec

ment of a tool to assist in agroenvironmental self-evaluation; and the incorporation of integrated pest management practices on the farm.

Furthermore, under the SLV 2000 Action Plan, agroenvironmental management tools for farm use were developed by various departments. Forecasting models based on agrometerological data were developed to facilitate decision making on the optimum use of pesticides in controlling insect pests and diseases. Preliminary results show that this type of tool can be used to reduce the number of treatments for late blight of potato by 60%. Reductions in the number of treatments were also obtained for other crops, including carrots, lettuce and onions. Another model under development uses an image analysis system to assist in scouting for, and predicting losses due to, weeds. This allows farmers to stop using preventative treatments of herbicides and to decide at the beginning of the growing season whether treatment is actually needed or not. These models and databases are proving very useful in pesticide reduction by allowing the optimization of treatments, the reduction of the number of treatments or the reduction of application rates.

Follow-up by the Ministère de l'Environnement du Québec (MENV), however, suggests that these activities have had positive benefits. For example, a decrease in pesticide contamination of the tributaries of the St. Lawrence has been observed, as has a decrease in the number of times that atrazine contamination in the water has exceeded water quality criteria standards for the protection of aquatic life. (Nonetheless, the levels of atrazine and other pesticides in the water still exceeds standards on some occasions.) Furthermore, according to preliminary data collected by MENV for 1998 pesticide sales in Québec, the total quantity of herbicides sold registered a drop from the previous year.

Boyer River

Since 1998, awareness and promotion efforts directed at a large number of farm producers to ensure the environmental management of the Boyer River watershed have led to 80 farmers joining "green clubs." This pilot project is contributing to the better understanding of water quality-related agricultural issues in the watershed. In addition, farmers appear to be increasingly interested in modify-

ing their farming practices. Over 160 farming enterprises have acquired leakproof manure storage facilities, with an ever-increasing number of farmers joining their ranks.

Modelling surface water contamination by phosphorous

Phosphorous is a nutrient essential to crop growth but excessive phosphorous in the soil may lead to surface water contamination. Therefore, a substantial effort is being made to better understand and model the migration of phosphorous in the soil in order to formulate more useful recommendations for fertilizer use. Soil and crop type are key factors to be taken into account. In the case of forage crops, preferential flow has been found to play an important role in the movement of phosphorous regardless of the soil type, while, in corn, preferential flow is only significant in very sandy or clayey soil.

Verification of compliance with the *Regulation respecting the reduction of pollution from agricultural sources*

With the introduction of new regulations and the tightening of controls over agricultural pollution, over 5000 visits and inspections have been made since 1998 to the many farming enterprises located near the main tributaries in Québec, to ensure that storage and spreading standards for manure and slurry are respected.

Furthermore, in the six agricultural regions (Chaudière-Appalaches, Montréal-Laval-Lanaudière, Montérégie East and West, Centre du Québec and Estrie) targeted as priorities under St. Lawrence Vision 2000, funding is being provided to farms to help them meet standards for the leakproof storage of manure and slurry. Since 1998, over 1147 farms have met the standards for the watertight storage of animal dung, or 57% of the objective of 2000 farms set for the year 2003.

The results of these activities are encouraging and success rates have been high enough to result in noticeable improvements in water pollution from pesticides and fertilizers in the tributaries of the St. Lawrence.

BIODIVERSITY

TARGET RESULTS FOR
March 31, 2003

Contribute to safeguard 35 threatened species of fauna and flora.

Control the introduction of exotic species and limit the impacts of invasive species.

Protect 120,000 ha of natural habitats, including direct acquisition of 1,660 hectares.

Develop and implement seven management and conservation plans for sensitive habitats.

Educate and heighten public awareness on the ecological value of the St. Lawrence.

Develop structures and sites with ecological potential to promote public access to the St. Lawrence.

Assess impacts of water level variations due to climate change on the ecosystem and on the uses of the St. Lawrence.

Provide forecasts and analyses on the state of the St. Lawrence by implementing an integrated monitoring system.

Under the Biodiversity area of action, efforts to protect species and conserve habitats initiated during the previous two phases of the action plan are continuing. During Phase III, the challenge will be to accelerate the achievement of results while advancing work on the impact of water level variations and on monitoring the state of the St. Lawrence ecosystem.

A contribution to saving 35 species at risk

SLV 2000 partners have persevered in their efforts to ensure the recovery of the St. Lawrence Beluga population. Studies were carried out on distribution, territory, behaviour and mortality in the species and a working committee was formed to ensure adequate guidance for, and better cooperation in, whale-watching activities in the Saguenay — St. Lawrence Marine Park.

Nineteen action plans aimed at the maintenance or recovery of species at risk were implemented. The Horned Grebe, Anticosti aster and *Asimmina mastrals* (a type of milk-vetch) were protected by establishing legally protected areas such as the Pointe-de-l'Est wildlife sanctuary in the Magdalen Islands and the Grande-Rivière and Mont-Saint-Pierre ecological reserves, which will be officially established in 2000. Work to determine the exact location of Atlantic sturgeon spawning grounds and to improve our knowledge of areas frequented by the copper redhorse was also completed. Recovery plans were formulated for the copper redhorse, striped bass, Western chorus frog, green dragon and eyer arrowleaf, a subspecies found in estuaries. Under the Quebec process of designating threatened and vulnerable species, eight species of wildlife received official status and 13 plant species will obtain such status shortly.

A databank with information on nearly 550 nesting sites for bird species at risk was developed by the Biodiversity partners. A number of vegetation inventories were also carried out, allowing the discovery of three plant species previously thought to be extirpated in Quebec.

The public awareness campaign to reduce the impact of human activities on the Piping Plover population on the Magdalen Islands, as well as populations of certain other dune species, continued. Predator control measures were implemented, allowing the decrease in the Piping Plover population to be curbed. (The population was only of 88 individuals in 1999.) In addition, various techniques to manage Yellow Rail habitat were tested, showing the importance of preventing alders from colonizing Yellow Rail habitat.

Control of exotic and invasive species

Amongst the numerous activities targeting exotic species in the St. Lawrence and Richelieu rivers, the discovery of a new alien fish species, the tench merits special mention.

In addition, scientific reports and other documents informing the public on how to prevent the spread of zebra mussels and other pest species were published. A study was also completed to assess the effectiveness of a chitin-based coating compound in repelling zebra mussels.

Lastly, a great deal of energy was put into implementing the Greater Snow Goose Action Plan, to reduce crop

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Evaluation of the impacts of water level variations
Photo: Christiane Hudon, Environment Canada

depredation by the species and control the rapidly expanding population.

120,000 hectares of natural habitat protected

Since 1998, two new ecological reserves have been created: the Réserve Écologique Léon-Provancher and the Réserve Écologique de la Rivière-aux-Brochets. In addition, 1316 hectares were protected by creating the Rivière-des-Mille-Îles and Pointe-de-l'Est wildlife sanctuaries.

Work to identify and select sites with potential as marine protected areas as defined under the new *Oceans Act* is continuing in the natural regions of the Magdalen Banks and the North Shore shelf. Negotiations are also underway to protect the islands in the western part of the Mingan Archipelago natural district.

Various initiatives have also been undertaken under the Community Interaction program and the federal Blue Montreal initiative, with the cooperation of various nongovernmental organizations and other partners, allowing 252 ha of habitat to be protected. In addition, 1860 ha of natural habitat has been protected on federal lands.

Management and conservation plans for sensitive habitats

Significant progress has been made in developing an integrated coastal zone management approach for the Upper North Shore. This should result in a management plan that incorporates both enhancement and public awareness activities.

Educating the public on the ecological value of the St. Lawrence

During the last two years, funding has been provided to various local partners carrying out public aware-

ness activities in national wildlife areas. For example, at the Cap Tourmente National Wildlife Area, interpretation activities were added to the existing school program and a brochure for schools was produced and distributed.

SLV 2000 partners also helped organize the 4th National Habitat Workshop held in Québec City in August 1999.

Public access to the St. Lawrence

Work to develop infrastructures and sites facilitating public access to the St. Lawrence was done in cooperation with certain municipalities. The shoreline of Lake St. Louis in Châteauguay, Summerlea Park in Lachine and the Léon Provancher marsh in Neuville were developed to provide amenities such as trails, benches and picnic tables.

Work is continuing on the revitalization of the Lachine Canal to open it to pleasure boating in 2002. Specialists are also working to set up a monitoring program to prevent the contamination of the St. Lawrence when sediments are resuspended.

Impacts of water level variations

The very low water levels in the St. Lawrence in 1999, which were exceptional, allowed scientists to carry out various sampling programs to establish links between the quantity of water available and impacts on the ecosystem (species and habitats). The river's hydrodynamic behaviour was also modelled, paying special attention to the stretch between the Port of Montréal and Trois-Rivières.

Monitoring the state of the St. Lawrence

A number of indicators are now available; the question is which set of indicators is the most appropriate to provide a comprehensive picture of this complex ecosystem. With this in mind, an integrated monitoring program has been established to obtain a better understanding of changes in the state of the St. Lawrence. A workshop, attended by the co-chairs of all SLV 2000 areas of action, was held to decide on the foundations of the program to monitor the state of the St. Lawrence. The participants chose a concept in which 19 indicators are used to represent the state of the river, based on current monitoring activities carried out by Agreement partners.

A pilot project begun in the autumn of 1999 is documenting, in the form of summary sheets, 11 of the 19 indicators retained. Each sheet contains three components: the issue (its importance), the status of the situation (what are the current data, how they can be compared with previous data and what can be done to improve the situation) and outlook for the future (observations on the issue on a global and local scale and comparison with other bodies of water). These sheets are currently being prepared. SLV 2000 partners, Great Lakes managers and experts and the general public have been kept informed of the process and the steps completed or in progress. The foundations of a long-term monitoring program on the state of the St. Lawrence are still being developed, but already several governmental organizations and citizens groups are expected to participate.

PILOT PROJECT ON THE STATE OF THE ST. LAWRENCE

CONCEPTUAL FRAMEWORK AND INDICATORS

Components	Characteristics	Indicators retained
Water	Quality	• Index of bacteriological and physicochemical quality • Fecal coliform bacteria • Total phosphorous • Contamination and water quality parameters
	Quantity Hydrodynamics	• Hydraulicity (level and flow rate)
Riverbed	Sediment quality	• Sediment contamination
Biological resources	Condition	• Status of the Beluga population • Status of the Great Blue Heron population • Status of the Northern Gannet population • Contamination of estuary and Gulf biota • Contamination of fish in the freshwater section

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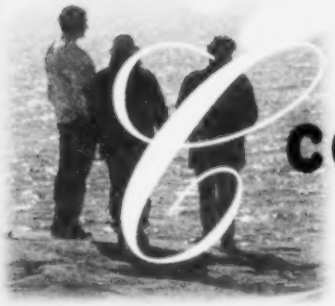

COMMUNITY INVOLVEMENT

During Phase II of the action plan, the Areas of Prime Concern (ZIP) and Community Interaction programs promoted the involvement of riverside communities in protecting and developing the St. Lawrence. In Phase III of the SLV 2000, these programs will be continued, and should increasingly result in the implementation of concrete projects in the community.

TARGET RESULTS FOR
March 31, 2003

Help build consensus in 14 riverside communities (ZIPs) on local environment issues under the coordination of Stratégies Saint-Laurent.

Give scientific and technical support to the ZIP committees.

Disseminate high-tech information on the St. Lawrence by way of the Biosphere Ecowatch Network and of an expertise and scientific popularization centre on health and environment.

Support the implementation of 150 community projects arising from ERAPs or the communities, giving priority to access to the St. Lawrence and recovery of uses.

ZIP program

At the beginning of Phase III, the federal and Québec governments confirmed the importance of community involvement by signing a framework agreement with the nongovernmental organization Stratégies Saint-Laurent, which has been working for a number of years in promoting joint action by riverside residents.

Since this time, Stratégies Saint-Laurent has worked toward the creation of three new ZIP committees (ZIP stands for Areas of Prime Concern): *Îles-de-la-Madeleine*, *Les Deux Rives and des Seigneuries*, to be added to the ten existing committees established between 1993 and 1997.

Four regional assessment reports containing information on biological, physico-chemical and socioeconomic resources were produced and published for the regions of Valleyfield-Beauharnois (Haut Saint-Laurent ZIP Committee), the Magdalen Islands (Îles-de-la-Madeleine ZIP Committee), Portneuf-Saint-Nicolas (Québec and Chaudière-Appalaches ZIP Committee) and Trois-Rivières-Bécancour (Les Deux Rives ZIP Committee). These assessments were presented during four sets of public consultations organized by the respective ZIP committees in these regions. During the consultations, citizens expressed their opinions on the priority actions to be undertaken in their area, which were noted in the Environmental Remedial Action Plan (ERAP).

During the last two years, ten ZIP committees have started implementing their respective ERAPs. A number of resource conservation, restoration and enhancement projects arising from the action plans have received scientific and technical support from the two levels of government. A workshop was held in June 1999 to consult departments likely to provide scientific and technical support to committees implementing their ERAPs; around 60 representatives of the Québec and federal governments attended. A number of departments showed interest in supporting ZIP committees' actions and ensuring that actions were complementary.

Dissemination of up-to-date and accurate information on the St. Lawrence

The Biosphere's Ecowatch Network currently consists of over 80 diverse organizations such as schools, companies, municipalities and nongovernmental organizations. Members of these organizations participate in gathering, pooling and sharing scientific information and popular experience (citizen science) on the Great Lakes - St. Lawrence waters and ecosystem. A number of communication tools, such as the Internet, electronic mail and various newsletters, are used to disseminate information on the river and SLV 2000 achievements to network members. In June 1998, the network's newsletter *The Ecowatcher* presented the results of the first ten years of the St. Lawrence Action Plan. A monthly column on the

Shoreline stabilization
Photo : Claude Martel, Comité de l'environnement de Chicoutimi

Biosphere's Internet site also deals with current SLV 2000 news.

The project related to the creation of a center of expertise and scientific popularization that would have disseminated up-to-date information on the St. Lawrence will not be carried out during phase III.

Community Interaction program

Although some components of the Community Interaction program used successfully in Phase II have been conserved in Phase III, major changes have been made in the program. The program is now jointly funded by three governmental partners: Environment Canada, the Ministère de l'Environnement du Québec and the Société de la faune et des parcs du Québec. The maximum funding now given organizations is 50% of the total value of eligible expenses of the project, up to $100,000, while studies may receive up to 70% of their total value, to a maximum of $30,000. During the first year of Phase III, the establishment of the new program led to some delays in funding to community groups as well as smaller government investments than expected.

Up to now, over 84 different organizations have submitted project proposals for funding and 75 projects have been funded under the program, representing a total contribution of $3,038,203. Considering that there are still four remaining submission deadlines for project proposals, 50% of the goal of 150 funded projects has been achieved. Among the projects funded to date, 74% are directly linked to an Environmental Remedial Action Plan (ERAP), meaning that a technical fact sheet was clearly defined in the plan or that the project was identified as an important issue by the ZIP committee.

DISTRIBUTION OF PROJECT FUNDING

Category	Number of projects	% of projects
Physical activities	21	28%
Enhancement and accessibility	6	8%
Land acquisition and stewardship	12	16%
Studies	27	36%
Awareness	9	12%
	75	100%

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INDUSTRIAL AND URBAN

TARGET RESULTS FOR
March 31, 2003

Acquire and process information on the following industrial sectors: metallurgy, metal and chemical so as to give priority to interventions with respect to the 18 priority toxic substances.

Develop environmental management tools for the metallurgy, metal and chemical sectors.

Introduce preventive projects in 60 plants (20 per sector) and evaluate the environmental and economic gains.

Proceed to the control and inspection in the industrial sector.

Provide technical expertise and financial support to promote refinements, adaptation and commercialization of new technologies and facilities to prevent pollution.

Measure toxicity of effluents from three major metropolitain areas (Montréal Urban Community, Québec Urban Community, Outaouais Urban Community) and nine other municipalities in order to support corrective measures.

Complete the reduction of toxic liquid effluents from 10 Phase II priority plants (90% or optimal reduction to achieve virtual elimination).

Introduce an environmental awards program for the industrial plants targeted under the first two phases of the St. Lawrence Action Plan.

During the last two phases of SLV 2000, a number of major industrial firms have been induced to install treatment systems to eliminate pollutants previously discharged into the St. Lawrence that arise from the various industrial processes used. In Phase III, the objective is to reduce toxic liquid effluents from small- and medium-sized businesses (SMEs). A new approach has been adopted: pollution prevention. Rather than react to the consequences of pollution, the emphasis is on prevention at the source.

Pollution prevention entails adopting new processes, forms of energy and practices that prevent or minimize the production of pollutants and waste. This approach emphasizes voluntary participation while encouraging changes likely to reduce production costs, improve efficiency and reduce the risks to human health and the environment.

Profile of targeted small- and medium-sized businesses

Discussions were held with stakeholders from industry and regional partners to obtain the basic information required to produce a characteristic profile of the industrial sectors targeted.

Environmental management tools for targeted SMEs

An inventory was carried out of the pollution prevention tools available in the three industry sectors targeted. These varied tools, which were developed for SMEs, provide help in determining the appropriate pollution prevention actions. For example, technical guides are available to help firms review their facilities and propose changes in their operations (even to the extent of finding substitutes for such things as products and solvents). Other tools made available to SMEs include technology data sheets illustrating success stories in preventing pollution or diagnostic tools to facilitate pollution prevention and identify priority areas for action in different types of industries.

Prevention projects in 60 industrial plants

A pilot project was launched in each of the three industrial sectors targeted. Pilot projects are useful in that they allow stakeholders' roles to be better defined, improve the methodology used and provide a better knowledge of priority sectors and difficulties associated with pollution prevention. The projects consisted of the following steps: diagnosis, support, the actual project and evaluation. A draft version of a practical guide for establishing environmental diagnoses and selecting pollution prevention projects, *Guide pratique pour l'établissement d'un diagnostic environnemental et pour l'identification de projets de prévention de la pollution*, developed by the industrial and urban cooperation committee, was used successfully to identify pollution prevention projects that were feasible and well suited to the sector. One result of the pilot projects was the finding that recruiting volunteer firms would require much more time and energy than expected. Realistically, more time will be required to achieve the objective of 60 plants.

The goal of pollution prevention by SMEs is not only to reduce discharges of toxic substances to the environment but also to derive other benefits

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The goal of pollution prevention by SMEs is not only to reduce discharges of toxic substances to the environment but also to derive other benefits

Photo: Ministère de l'Environnement du Québec

such as cutting down on water use and energy consumption. At the same time, prevention must also result in savings and increased competitiveness for the firm. The effort continues to find effective indicators for evaluating overall economic and environmental gains; examples include pollution prevention coefficients and unweighted economic indices. The results, expected in 2000-2001, will help to determine the direction of the program.

Control and inspection in the industrial sector

During Phase III, MENV's regional directorates continue to analyze requests for certificates of authorization, perform compliance inspections and monitor the industrial establishments in their respective jurisdictions.

Development of new technologies

Four projects in this area have been completed while 14 others are still in progress, representing $16.4 million in investments. A total of $4.5 million in investments are being provided under the Idea SME program, which provides scientific, technical and financial support to SMEs for activities involving marketing and the technological demonstration of products, processes and prototypes in the environmental field.

So far, projects completed under the program have dealt with the treatment of PCB (polychlorinated biphenyls) contaminated soils, the development of environmental management software, the reclamation of steel dust, the development of an oil interceptor and skimmer and support for the marketing of an ozonation technique for industrial wastewater. In the agroenvironmental field, projects involving the reclamation of manure and the demonstration of various pollution prevention techniques are underway.

In addition, the Montreal Centre of Excellence in Environmental Site Remediation (MCEES8) was created, a nonprofit organization that provides scientific and technical support to research, development and experimentation projects involving soil decontamination or the rehabilitation of contaminated sites. Current projects include the development of software to evaluate ecotoxicological risks, the development of soil decontamination processes based on plants (phytoremediation) and the optimization of processes for treating mixed contamination.

Toxicity of municipal effluents

The toxicity of effluents from 12 municipal wastewater treatment plants was characterized during the summer of 1999, supplementing the winter characterization program begun during SLV 2000 Phase II. A report on the results and conclusions drawn from all the data will be published in the spring of 2001.

Priority industrial establishments in Phase II

The industrial and urban cooperation committee assessed 107 establishments targeted during the first two

phases of the action plan. A total of 72 establishments were awarded an environmental recognition certificate to recognize their attainment of the expected results and their participation in SLV 2000 activities. Among the remaining establishments, ten are now closed and the 25 others have until March 31, 2001 to achieve the objectives set and carry out SLV 2000 activities so that they, too, can obtain a certificate.

NAVIGATION

TARGET RESULTS FOR
March 31, 2003

Develop and implement a navigation management strategy consistent with sustainable development on the St. Lawrence and in co-operation with the shipping industry, environmental interests, the governments and the public.

Establish a dredging mechanism to monitor activities on the St. Lawrence.

Produce or update tools to improve sediment management practices.

Implement a management plan for contaminated sites that may present a risk for the ecosystem.

Develop tools and manuals to improve the management of risks and environmental threats in a context of sustainable navigation on the St. Lawrence.

Protect the banks of the St. Lawrence against erosion caused by shipping and boating.

Introduce regulations or a code of good practice governing discharge of ballast water.

Navigation is a new area of action introduced during Phase III of SLV 2000. The coordination committee is made up of stakeholders from all sectors concerned with navigation (government departments, the shipping industry and environmental and community organizations). Its primary objective is to develop a sustainable navigation strategy, by formulating a set of concrete, feasible joint actions that will be submitted to the various parties concerned with commercial shipping and pleasure boating. One of the first priorities is to carry out an up-to-date assessment of current knowledge on the impacts of navigation on the St. Lawrence.

Sustainable navigation strategy

A sustainable navigation strategy for the St. Lawrence must not only incorporate all the activities of the Navigation committee but also reflect the interests and concerns of all stakeholders involved. Several elements in the assessment have been completed, including a clear definition of the environmental issues linked to commercial shipping and pleasure boating. A second study has focused on the socioeconomic dimensions of navigation, allowing the scope and diversity of the sector to be fully appreciated.

Sediment and dredging management

The dredging activities required to allow shipping on the St. Lawrence raise complex scientific, environmental, operational, economic and social issues. The Navigation committee is carrying out several studies on these issues to make relevant information available to all stakeholders. To this end, an annotated literature review was completed on the management of dredging activities and assessment tools for sediment quality. An integral part of a comprehensive portrait of dredging and sediment management activities on the St. Lawrence, this literature review provides an up-to-date synthesis of knowledge useful in defining an integrated approach to dredging management in the St. Lawrence.

Management plans for contaminated sites

During the first two phases of SLV 2000, a number of contaminated sites were identified, mainly near industrial and urban facilities. Since the beginning of Phase III, some contaminated sites have received special attention, particularly sector 103 in the Montréal harbour area, where support has been provided to the Jacques-Cartier ZIP Committee to restore the site.

In addition, a preliminary characterization study was carried out on the sediments at the mouth of Saint-Louis River in 1998-99 with the collaboration of the Haut-Saint-Laurent ZIP committee. A follow-up study to more precisely characterize polychlorinated biphenyls (PCBs) and benzene hexachlorides (BHCs) was completed in 1999-2000. The results of these studies have prompted the industries concerned to become more involved in remediating the contaminated sediments at these sites.

Environmental risk and danger management

A number of tools for protection and prevention are being developed for the St. Lawrence. The *St. Lawrence*

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Photo: Madeleine Papineau, Environment Canada

Observatory Web site, the purpose of which is to facilitate access to scientific data and disseminate information on the river, is now up and running at www.osl.gc.ca.

Shoreline erosion

Commercial shipping and pleasure boating are one of the causes of shoreline erosion. The Navigation committee has the mandate to provide up-to-date information on this phenomenon to facilitate the development of realistic solutions, particularly regarding ship speed. The first step was to inventory sensitive areas and identify those where wave action is a cause of bank erosion. Two studies on the potential impact and control of ship speed on the St. Lawrence are also currently in progress. The Navigation committee is also working, in cooperation with the shipping industry, to find practical and suitable ways to reduce the impact of wave action.

Ballast water

In the area of environmental policy, the issue of the introduction of exotic species by means of ballast water of ships is receiving special attention. The Navigation committee is working to improve ballast water management by bringing together stakeholders in the shipping industry and experts in several fields to draft, as part of the work of the Canadian Marine Advisory Council, new guidelines for ballast water management in the St. Lawrence.

HUMAN HEALTH

During Phase III of SLV 2000, the Human Health cooperation committee intends to pursue and consolidate the actions undertaken in Phase II, to disseminate the results and integrate new human health concerns into its work plan.

During the winter of 1998, the committee launched a call for project proposals from the various stakeholders in Québec's public health network, the Québec and federal departments, universities and research centers. As a result, roughly thirty projects were funded that will contribute to the achievement of the three results targeted in the Human Health area of action.

Recreational waters

According to data from a health survey on uses and perceptions of the St. Lawrence, *Enquête santé sur les usages et les perceptions du Saint-Laurent* (Dewailly, Grondin and Gingras 1999), carried out during Phase II, roughly 6% of riverside residents participate in recreational activities that involve contact with the water of the St. Lawrence. According to the same survey, however, over a third of those who do not participate would be ready to change their behavior if they were told that the water was of good quality. Recently the microbiological quality of the water at thirty or so potential swimming sites along the St. Lawrence was assessed. The analysis results revealed that 40% of the sites sampled could have been open at least 75% of the time during the summer.

However, 25% of the sediment analyses at some of the sites sampled showed signs of significant microbiological contamination. Furthermore, in a study carried out on five sites north of the Montréal region, analyses of various pathogenic microorganisms such as enteroviruses and protozoa, were performed. The results of the study show that, at certain sites, the water used or potentially used for recreation has significant microbiological contamination.

A comparative evaluation is underway on the perception of health risks (microbiological, safety, noise pollution) by operators of personal watercraft versus those by other users of the same bodies of water. In addition, in the heavily used Mille-Îles area, a survey of users is being carried out to identify behavior posing a health risk to users as well as to determine users' own perceptions of these risks. The risk characterization includes health problems linked to contact with the water as well as safety issues.

Drinking water

Data gathered in Phase II show that, despite the fairly high quality of drinking water, it contains certain pathogenic microorganisms (such as viruses, bacteria and protozoa) that may cause infectious diseases. Projects are underway to measure the actual incidence of enteric diseases linked to drinking water, by setting up an active monitoring system for these diseases. A response guide dealing with the issue of drinking water contamination, whether real or feared, after a major spill in the St. Lawrence was prepared for Québec's regional public health departments.

In addition, the presence of by-products of alkylphenol ethoxylates (which are used in various industries including pulp and paper and textiles) is being assessed in the drinking

TARGET RESULTS FOR
March 31, 2003

Reduce the public's exposure to waters used for outdoor recreation where there is a risk of microbiological contamination.

Reduce public exposure to drinking water where there is a risk of chemical and microbiological contamination.

Reduce the public's exposure to consumption of aquatic products where there is a risk of organic and inorganic contamination.

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Recreational waters

According to data from a health survey on uses and perceptions of the St. Lawrence, *Enquête santé sur les usages et les perceptions du Saint-Laurent* (Dewailly, Grondin and Gingras 1999), carried out during Phase II, roughly 6% of riverside residents participate in recreational activities that involve contact with the water of the St. Lawrence. According to the same survey, however, over a third of those who do not participate would be ready to change their behavior if they were told that the water was of good quality. Recently the microbiological quality of the water at thirty or so potential swimming sites along the St. Lawrence was assessed. The analysis results revealed that 40% of the sites sampled could have been open at least 75% of the time during the summer.

However, 25% of the sediment analyses at some of the sites sampled showed signs of significant microbiological contamination. Furthermore, in a study carried out on five sites north of the Montréal region, analyses of various pathogenic microorganisms such as enteroviruses and protozoa, were performed. The results of the study show that, at certain sites, the water used or potentially used for recreation has significant microbiological contamination.

A comparative evaluation is underway on the perception of health risks (microbiological, safety, noise pollution) by operators of personal watercraft versus those by other users of the same bodies of water. In addition, in the heavily used Mille-Iles area, a survey of users is being carried out to identify behavior posing a health risk to users as well as to determine users' own perceptions of these risks. The risk characterization includes health problems linked to contact with the water as well as safety issues.

Drinking water

Data gathered in Phase II show that, despite the fairly high quality of drinking water, it contains certain pathogenic microorganisms (such as viruses, bacteria and protozoa) that may cause infectious diseases. Projects are underway to measure the actual incidence of enteric diseases linked to drinking water, by setting up an active monitoring system for these diseases. A response guide dealing with the issue of drinking water contamination, whether real or feared, after a major spill in the St. Lawrence was prepared for Québec's regional public health departments.

In addition, the presence of by-products of alkylphenol ethoxylates (which are used in various industries including pulp and paper and textiles) is being assessed in the drinking

TARGET RESULTS FOR
March 31, 2003

Reduce the public's exposure to waters used for outdoor recreation where there is a risk of microbiological contamination.

Reduce public exposure to drinking water where there is a risk of chemical and microbiological contamination.

Reduce the public's exposure to consumption of aquatic products where there is a risk of organic and inorganic contamination.

and raw water in certain sectors at risk in the St. Lawrence. A preliminary study was conducted on the effect of postnatal exposure to chlorine dioxide (currently used as a disinfectant in drinking water) and the effect of two of its by-products on thyroid function and certain blood parameters in infants. The results of the pilot study have not yet allowed any definitive conclusions to be reached on the potential effects of chlorine dioxide on infants.

Seafood and other products of the river

Some dietary practices are unique to populations living in maritime environments. It is not known, however, whether these habits pose a health risk. Efforts are underway to better document the safety of seafood and other products. With respect to shellfish consumption, a monitoring program was set up in all the health establishments in the regions where shellfish harvesting is practiced. The program's objective is to identify and characterize cases of shellfish poisoning or other ailments caused by exposure to marine toxins or microorganisms. In addition, a study is being conducted to estimate the validity of a commonly used indicator for fecal contamination in marine environments. Lastly, the presence of newly identified biotoxins in shellfish in the Estuary and Gulf of St. Lawrence is being studied to prevent potential poisoning in consumers.

In the Gulf and Estuary, a study is being conducted on seal hunters to document health risks linked with their lifestyle, including both diet and health risks linked to hunting practices. The program to monitor exposure in newborns to polychlorinated biphenyls (PCBs) on the North Shore, initiated during Phase II of St. Lawrence Vision 2000, is continuing. Health risks associated with the consumption of waterfowl are currently being evaluated in 550 holders of waterfowl hunting permits.

Shellfish harvesting
Photo: Denis Chamard, Fisheries and Oceans Canada

In the Saguenay region, an evaluation of exposure to contaminants in sport fishers (ice fishing) is underway. In the urban environment, issues related to subsistence fishing among the disadvantaged are being studied.

Dealing with the use of the resources of the St. Lawrence of course goes beyond the question of adverse health risks. The consumption of these resources also has numerous health benefits. A food guide on the nutritional qualities of fish harvested from Lake St. Pierre should be available shortly and a survey of aquatic ethnomedicinal plants in the Chaleur Bay is being carried out by native people of the Micmac nation.

COMMUNICATIONS

Since the beginning of the third phase of the St. Lawrence Vision 2000 Action Plan, a number of communication activities have been undertaken to make the general public and various partners aware of the progress of the projects and achievements. All the government partners involved in SLV 2000, both from the federal and Québec governments, have helped to ensure the widespread dissemination of the knowledge acquired on the state of the St. Lawrence, by publishing the results of research and studies as well as environmental and health assessments.

The Agreement partners have favoured a wide range of means of disseminating information to inform the general public, media and various target clienteles on the activities, programs, results and achievements of Phase III of SLV 2000. Such means include the SLV 2000 Web site; *Le Fleuve* newsletter; the distribution of numerous reports, studies and assessments; press conferences and press releases; participation in public consultations; and participation in public affairs shows, trade shows, workshops, colloquia and forums on a regional, national and international level.

INSITUTIONAL COMMUNICATION ACTIVITIES

Public launching of Phase III of SLV 2000

Publication of a brochure on Phase III of SLV 2000 to promote Phase III and the results to be achieved in the various areas of action

Production of a video and CD-ROM on SLV 2000's ten years of achievements (1988 to 1998) and Phase III

SLV 2000 Web site:Review and updating of the site's architecture and graphic design

Extensive documentation of Phases I and II to provide as complete a portrait as possible

Two hundred and seventy one (271) products were made available on line (assessments, studies, press releases, reports, etc.)

Announcement of new products made available on line sent to more than 1,000 individuals and organizations

Production and publication of 18 issues of the monthly newsletter *Le Fleuve*. *Le Fleuve* is available in an electronic version on the SLV 2000 Web site. A hard copy of the newsletter is sent to Stratégies Saint-Laurent and the ZIP committees

Participation in various public events such as the International Great Lakes and St. Lawrence Mayors' Conference, Symposium on the St. Lawrence Seaway and Québec Biologists Association Conference (Congrès de l'Association des biologistes du Québec)

COMMUNICATION ACTIVITIES IN THE VARIOUS AREAS OF ACTION

Agriculture

Creation of a Web site on the Québec pest management strategy: *Stratégie phytosanitaire - Programme agroenvironnemental de soutien à la stratégie phytosanitaire*: **www.agr.gouv.qc.ca** and publication of a brochure on the subject

Production and distribution of a poster and fridge magnet on the reduction of agricultural pesticides, entitled *Pesticides agricoles: moins et mieux*

Production and distribution of a newsletter on mechanical weeding for field crops: *Appareils de désherbage mécanique en grandes cultures*

Production and distribution of a poster on herbicides and resistance in weeds: *Les groupes d'herbicides et la résistance des mauvaises herbes*

Production and distribution of a brochure on reducing herbicide application rates in field crops: *Les doses réduites d'herbicides en grandes cultures*

Production and distribution of technical data sheets on using secondary insects in potatoes and mechanical weeding in corn: *Insectes secondaires de la pomme de terre. Le désherbage mécanique du maïs*

Production and distribution of guides on scouting in grain crops and weeds in corn: *Le dépisteur céréales. L'Expert mauvaises herbes - maïs*

Production and distribution of a field guide to apple pests and their natural enemies: *Guide d'identification des ravageurs du pommier et de leurs ennemis naturels*

Production and distribution of a field guide to harmful and beneficial insects in sweet corn: *Guide d'identification des insectes nuisibles et utiles dans la culture du maïs sucré*

Production and distribution of a CD-ROM containing a research report and database on the potential of using reduced herbicide application rates

Production and dissemination of agrometerological data (observed and predicted) compatible with the CIPRA software package (Computer Centre for Agricultural Pest Forecasting)

Biodiversity

Production and dissemination of a conservation plan for the green dragon in Québec, 1999-2003

Dissemination of the Habitat Technical Committee's five-year report on the SLV 2000 Web site

Production and dissemination of an action plan for the Copper Redhorse

Production and distribution of a field guide to marine phytoplankton of the estuary and Gulf of St. Lawrence: *Guide d'identification du phytoplancton marin de l'estuaire et du golfe Saint-Laurent*

Production and distribution of brochures and data sheets on threatened and vulnerable species in Québec

On-line information capsule on the SLV 2000 website on the different species of marine mammals found in the Estuary and Gulf of St. Lawrence

Community Involvement

Announcement of the signature of a cooperation agreement with Stratégies Saint-Laurent

Dissemination and submission of four regional assessments to four ZIP committees

Presentation and communication of environmental data in regional assessments during four series of public consultations held by ZIP committees

Updating and distribution of a brochure on the Areas of Prime Concern (ZIP) program

Updating and distribution of a brochure and a promotional poster for the Community Interaction program

Establishment of a ZIP article in each issue of *Le Fleuve*

Industrial and urban

Production and dissemination of *SLV 2000 Report on Toxic Effluent Reduction in 38 Pulp and Paper Mills*

Production and dissemination of *Assessment of the Virtual Elimination of Bioaccumulative Toxic Substances*

Production and dissemination of *Report of the Multipartite Committee on Contaminated Sites of Concern for the St. Lawrence Beluga*

Production and dissemination of *The Evaluation of Effluent Toxicity from Québec's Municipal Wastewater Treatment Centres* - Progress report

Production and dissemination of an information brochure on the pollution prevention program

Information meetings with various Québec industrial associations

Updating of 33 fact sheets in the *Industrial Plants* series

Navigation

Creation of Web site on the St. *Lawrence Observatory*: **www.osl.gc.ca**

Participation and presentation of Navigation component at the semi-annual meeting of the Great Lakes Commission

Dissemination of technical report on environmental risks and consequences of navigation on the St. Lawrence: *Les risques et les conséquences environnementales de la navigation sur le Saint-Laurent*

Co-chairs of Navigation committee interviewed on radio show *D'un soleil à l'autre*

Article in *GLOBE magazine*

Human health

Production and distribution of a data sheet describing the results of a study on prenatal exposure to organochlorines and heavy metals and omega 3 concentrations in the population on the Middle and Lower North Shore: *L'Évaluation de l'exposition prénatale aux organochlorés et aux métaux lourds et des concentrations en oméga-3 des populations de la moyenne et de la Basse-Côte-Nord du Saint-Laurent*

Publication of a summary and press conference to disseminate the results of the study *Risks and Benefits Related to Consumption of St. Lawrence River Sport Fish*

Publication and distribution of a health survey on uses and perceptions of the St. Lawrence: *Enquête santé sur les usages et perceptions du Saint-Laurent*

Launching of public awareness campaign on health risks associated with molluscan shellfish consumption (Chaleur Bay)

Please note:

For information on all the scientific publications related to the various areas of action for the period covered by the biennial report, see the SLV 2000 Web site at: **www.slv2000.qc.ec.gc.ca**

GOVERNMENT EXPENDITURES 1998-1999

		Components							
	Governments	**Community Involvement**	**Biodiversity**	**Human Health**	**Industrial and Urban**	**Navigation**	**Agriculture**	**Communications and Coordination**	**Total**
	Environment Canada	2 642	3 770	380	1 487	779	540	1 037	10 635
C	Fisheries and Oceans Canada	341	1 622			891			2 854
A	Parks Canada		877						877
N	Canada Economic Development		5 113		1767				6 880
A	Health Canada			1 288					1 288
D	Agriculture and Agri-Food Canada						200		200
A	Public Works and Government Services Canada					20			20
	Transport Canada					51			51
Q	Ministère de l'Environnement et de la Faune du Québec	344	1 593		3 311	107	3 234	282	8 871
U	Ministère de la Santé et des Services sociaux du Québec			346					346
É	Ministère des Transports du Québec					15			15
B	Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec						13 680		13 680
E C	**Total (in thousands of dollars)**	**3 327**	**12 975**	**2 014**	**6 565**	**1 863**	**17 654**	**1 319**	**45 717**

GOVERNMENT EXPENDITURES 1999-2000

		Components							
	Governments	**Community Involvement**	**Biodiversity**	**Human Health**	**Industrial and Urban**	**Navigation**	**Agriculture**	**Communications and Coordination**	**Total**
CANADA	Environment Canada	2 962	4 399	691	1 420	705	639	985	11 801
	Fisheries and Oceans Canada	233	1 592			804			2 629
	Parks Canada		2 683						2 683
	Canada Economic Development		4 900		1 071				5 971
	Health Canada			1 500					1 500
	Agriculture and Agri-Food Canada						200		200
	Public Works and Government Services Canada					27			27
	Transport Canada					25			25
QUÉBEC	Ministère de l'Environnement du Québec	291	420		3 416	76	3 065	175	7 443
	Société de la faune et des parcs du Québec	416	1 108			30		108	1 662
	Ministère de la Santé et des Services sociaux du Québec			1 018					1 018
	Ministère des Transports du Québec					164			164
	Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec						13 680		13 680
	Total (in thousands of dollars)	**3 902**	**15 102**	**3 209**	**5 907**	**1 831**	**17 584**	**1 268**	**48 803**

NOTES

St. Lawrence
Vision 2000

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